

What Is Claimed Is:

1. A liquid crystal display device, comprising:

a thin film transistor substrate, on which a plurality of data lines and gate lines are positioned perpendicular to each other;

a plurality of pixel electrodes formed near intersections of the data lines and the gate lines;

a color filter substrate positioned parallel to the thin film transistor substrate, including a color filter layer, a black matrix and a common electrode formed thereon;

a polymer wall arrangement formed either on the thin film transistor substrate or on the color filter substrate dividing the substrate into a plurality of liquid crystal panels; and

at least one liquid crystal injection opening formed on each panel of the plurality of liquid crystal panels.

2. The device of claim 1, wherein at least two liquid crystal injection openings are formed.

3. The device of claim 1, wherein the polymer wall arrangement is formed of a material such as a sealing agent.

4. The device of claim 1, wherein the polymer wall arrangement has a cross shape.

5. The device of claim 1, wherein the polymer wall arrangement comprises at least one polymer wall which is formed parallel to a side of the thin film transistor substrate or the color filter substrate.

6. The device of claim 1, wherein the polymer wall arrangement is formed close to the black matrix.

7. A liquid crystal injection method, comprising:

- forming a polymer wall arrangement on a substrate;
- dividing the substrate into a plurality of liquid crystal panels by the polymer wall arrangement;
- connecting a plurality of liquid crystal injection openings and liquid crystal supply sections to the plurality of liquid crystal panels;
- generating a vacuum inside at least one panel of the plurality of liquid crystal panels by pumping through at least one liquid crystal injection opening of the plurality of liquid crystal injection openings to create a high vacuum state in the panel;
- defoaming liquid crystal in a defoamation pressing tank; and

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injecting the liquid crystal from the deformation pressing tank to the panel through at least one liquid crystal injection opening of the plurality of liquid crystal injection openings.

8. The method of claim 7, wherein the vacuum level inside of the plurality of liquid crystal panels is higher than that of the defoamation depressing tank after the pumping is performed.

9. The method of claim 7, wherein the vacuum level inside of the plurality of liquid crystal panels is about 10^{-6} torr.

10. The method of claim 7, wherein the vacuum level inside of the deformation pressing tank is about 10^{-3} torr.

11. The method of claim 7, wherein the substrate is one of a thin film transistor substrate and a color filter substrate.

12. The method of claim 7, further comprising forming the polymer wall arrangement of a material such as a sealing agent.

13. The method of claim 7, wherein the polymer wall arrangement has a cross shape.

14. The method of claim 7, further comprising forming the polymer wall arrangement close to a black matrix.

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15. A method for manufacturing a liquid crystal display device, comprising:

arranging a thin film transistor substrate parallel to a color filter substrate, wherein the color filter substrate has a color filter layer, a black matrix and a common electrode;

forming a polymer wall arrangement, either on the thin film transistor substrate or on the color filter substrate, which divides the substrate into a plurality of smaller liquid crystal panels;

forming a liquid crystal injection opening on each of the small liquid crystal panels;

generating a vacuum inside of the substrate by pumping the liquid crystal injection openings;

defoaming a liquid crystal inside of a defoamation pressing tank; and

injecting the liquid crystal from the tank into the substrate through at least one of the liquid crystal injection openings.

16. The method of claim 15, further comprising forming a spacer in the substrate.

17. The method of claim 15, further comprising forming the polymer wall arrangement of a material such as a sealing agent.

18. The method of claim 15, wherein the polymer wall arrangement has a cross shape.

19. The method of claim 15, further comprising forming the polymer wall arrangement close to a black matrix.

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